

**EPA**

**Moderator: Jonathan Stein**  
**June 7, 2016**  
**1:54 p.m. ET**

Operator: This is Conference # 163166159.

(Ericka): Hello.

(Marianne): Hi, it's (Marianne) (inaudible) and (Alexis Andiman) from (Earth Justice).

(Ericka): Hello (Marianne) and (Alexis). This is (Ericka Farrell) from Title VI (OCR).

(Marianne): Hi there.

(JerylJeryl): This is (JerylJeryl Covington) with OCR.

(Johanna): Hi, this is (Johanna Johnston) from (OGC). I believe we're just going to wait a couple more of more minutes. We're waiting for somebody else to join us on our side. Is Dr. Wing on the phone?

(unknown): Not yet.

(Ericka): OK.

(Elizabeth): Hi, it's (Elizabeth Haddock) at the Center for Civil Rights.

(Ericka): Hi (Elizabeth), this is (Ericka Farrell) from the Title VI OCR office and then we also have (JerylJeryl Covington) and (Johanna Johnston).

(Elizabeth): Great, great. Hope everybody is well.

(Ericka): Yes.

(Marianne): Hello (Liz) it's (Marianne) and (Alexis).

(Elizabeth): Hey there.

(Marianne): We just received a quick note.

(UnknownEricka):Hello.

Steve Wing: Hello, this is Steve. Sorry for being a few minutes late.

(Elizabeth): Hey Steve, it's (Elizabeth) and (Marianne) and (Alexis) are on too.

Steve Wing: Oh, so we're waiting for?

(Elizabeth): I think EPA's on as well EPA.

(Ericka): They're on yes. Hi Steve.

Steve Wing: Hello.

(ErickaEricka): So we have folks who will introduce themselves in the office of civil rights and the office of general counsel. I think they were also waiting for one more staff member from the office of general counsel.

(Johanna): OK. I think EPA's (also) here now too.

(Ericka): OK, great.

(Johanna): Do you want to?

(Ericka): OK. So is Dr. Wing?

(Johanna): Yes, he joined us.

(Ericka): OK, good afternoon everyone. Again this is (Ericka Farrell) from the office of civil rights with the U.S. Environmental Protection Agency in Washington D.C. and thank you for taking the time to talk with us. And as you know the office of civil rights is investigating whether North Carolina Department of

Environmental Quality I'm sorry, regulation of swine feeding operations discriminate against African Americans, Latinos and native Americans on the basis of race and national origin and neighboring counties and violate Title VI in EPA's implementing regulations.

And just so that you know, this interview will be recorded. And for the record Dr. Wing, can you please provide your full name?

Steve Wing: My full name, Steven with a V, Bennett Wing.

(Mary): And can we – this is (Mary O'Lone) from EPA office of general counsel. Can we just go around and say all who's on the phone before we sort of launch in here? So this is (Mary O'Lone) from the office of general counsel at EPA and we'll go around the room here.

(Johanna): Hi, this is (Johanna Johnston). I'm also from general counsel at EPA.

(JerylJeryl): This is (JerylJerylCovington) with the office of civil rights at EPA.

(Ericka): And again this is (Ericka Farrell) from the office of civil rights Title VI office.

(Mary): (Marianne), you want to do your group?

(Marianne): Sure so I'll start. It's (Marianne Engelman Lado) and I'm with Earth Justice.  
(Alexis)?

(Alexis): (Alexis Andiman) also with Earth Justice.

(Marianne): And (Elizabeth).

(Elizabeth): (Elizabeth Haddock) at the UNC Center for Civil Rights.

(Brad): (Brad Dusham) also at the Center for Civil Rights.

(Ericka): OK, that's it.

(Mary): And then Dr. Wing. OK yes.

- (Ericka): OK. Now again Dr. Wing could you provide us your professional contact information specifically your office address, office telephone number and office email.
- Steve Wing: Yes. My address is department of epidemiology campus box 7435 University of North Carolina Chapel Hill, North Carolina 27312. Phone, 919-966-7416. Email, (steve\_wing@unc.edu).
- (Ericka): Thank you. And we're going to start with a line of questioning.
- (Mary): So this is (Mary O'Lone) and I wanted to say you know thank you Dr. Wing for making yourself available for the interview and that you know if at any time you need to take a break or we need to break just let us know and we'll do that. And then also if we need to end early and you know reschedule or whatever we'll make whatever accommodations we need to.
- Steve Wing: Thank you.
- (Mary): But we very much appreciate you making yourself available. So we're going to start off with some quick sort of one off questions and then get into more of a general conversation as we go on. The first question was just was – is have you ever conducted any research that was funded by the pork industry?
- Steve Wing: No I have not.
- (Mary): Have you ever conducted any research on behalf of the North Carolina legislature such as the environmental review commission or any part of the North Carolina legislature?
- Steve Wing: No I have not.
- (Mary): OK. And this is just a general question about your research. So we see you know we see that you've focused on the swine industry and I'm just sort of wondering if you could give us a little background as to why not all cases in North Carolina but you know why you focus on swine.
- Steve Wing: Well I was introduced to the problem in 1995 when I began to meet residents of eastern North Carolina who were impacted in their neighborhoods by swine

operations. So I followed and I researched. I learned early on that there were – there was quite a bit of research about the swine confinements the new liquid waste management systems. But it was almost entirely about the engineering of the waste pits and the spray fields, animal nutrition, veterinary practices and so on and there was not any literature on environmental health impacts.

And because the residents that I met believed they were being most affected by the swine industry and keep in mind this is 20 years ago, I decided to focus on that. The poultry industry had not expanded as much at that time as it has now. Also because of the engineering waste management practices the liquid waste systems I believe had more potential for impacting neighbors than the dry (litter) system that most of the turkey and chicken operations use.

They are not benign but at the time I began it appeared to me that the swine operations were more important and furthermore they had developed very rapidly. The number permitted had increased very rapidly. And one of the other – one of the other issues that was brought up repeatedly by the residents that I met was that these facilities were disproportionately placed in communities of color. So it was that combination of issues that led me to focus on the swine operations.

(Mary): I have a question about you know the increase in the number of swine over time and I have to be – I have yet to figure out the answer to it and I'm hoping maybe you can help me. So in your declaration you say that between I think it was the early 80s and 2007 the number of swine increased from 2 million to 10 million. And then we also see that there was a moratorium on the expansion of swine facilities and you know permitting of new facilities between '95 and 2007. And I've been trying to figure out if there's you know when I read the sort of plain language of what is a moratorium and no expansion and no new ones how the numbers of pigs jumped.

Steve Wing: The expansion was primarily during the period of between the early 80s and 1998. Thereafter the numbers fluctuate. There were some facilities that had applied for permits before the moratorium that weren't able to open but for the most part the growth was between around 1980 and the late 1990s.

(Mary): OK, all right. Now we have some specific questions regarding the disparity studies and then after that we're going to just sort of focus on your interaction with North Carolina DEQ and the swine regulatory – the swine waste regulatory process. But we had a specific request about the October 19th, 2015 update. And you know we read that you had basically cleaned the coordinates you know to make sure that you had the right ones before you did the analysis. And we were wondering if we could get – if we could get those coordinates and any information you have describing the changes that were made to the North Carolina coordinates and the reasons for those changes.

Steve Wing: Definitely. I'm you know I haven't done the programming myself but I can contact either (Jill Johnston) or one of the research assistants at UNC and we can provide that to you.

(Mary): OK that'd be great. We have spoken to – we spoke to Dr. (Johnston) I'm sure (Marianne) told you and she was able to answer some of our questions about the 2014/2015 study but we still had a couple that we would like to ask you. And you know part of this is just – a lot of it is us we're not epidemiologists, trying to get a firm grasp on how we articulate to policy makers within EPA and those that we have to talk with. You know being able to explain in very plain terms what your study says and you know what it means.

And one of the – one of the questions that we have is just about getting a grip on the methodology that's used to count people in the two studies, in the one you did in 2000 and in the 2014/2015 study. And we were trying to figure out different ways to you know have you help us. And I think what we came up with we thought might be the easiest would be for the 2014/2015 study would be to look at table four and just you know march us through the numbers. Do you have it in front of you by any chance?

Steve Wing: I'm looking at table four right now from the updated study.

(Mary): From the – right. So it's at the top of page 14, right. Make sure we're talking about ...

Steve Wing: That's right.

- (Mary): OK.
- (Elizabeth): Can you hold on just a second? I'm just pulling it up as well.
- (Mary): Sure, sure.
- (Elizabeth): So this is from the 2015 study?
- (Mary): Yes, the 2015 study.
- (Elizabeth): OK.
- (Mary): And I was hoping this would help us you know just sort of generally march through how it's done because I have read and reread it the study and just tried to figure it out and it's me. (I'm not sure). I just have a, I have a tough time processing this kind of information. So in the first column the percent people of color, what you're – that is the, that represents of – tell me what that – tell me what that represents there, that column?
- Steve Wing: OK. So the first column percent POC are the ranges of percent for census blocks. So there are if you look at the first and second columns, there are 559,000 179,000 people who live in census blocks with no people of color.
- (Mary): And the census blocks are – the census blocks that you're counting are those that have a centroid within three miles of a CAFO, right?
- Steve Wing: No this is in this case this is all the census blocks in the study area.
- (Mary): All the census blocks in the study area, OK.
- Steve Wing: So the sum of the column population yields the total number of people in the study area. Because everyone in the study area lives in a block that either has no people of color or has less than 20 percent, 20 to 40 et cetera up to 80 to 100 percent people of color.
- (Mary): OK. And to get into the study area you had to be a census block that had a CAFO in it?

- Steve Wing: No, that's not the case. The study area was defined as the whole state minus ...
- (Mary): OK, right.
- Steve Wing: The five major cities and the western counties which have no permanent CAFOs either in those counties or an adjacent county.
- (Mary): OK and these are all ...
- Steve Wing: And that's we made following the work we had done previously that had been peer reviewed.
- (Mary): Repeat that. I think I interrupted – I was going to interrupt you but so.
- Steve Wing: The decision about how to define the study area mirrored the decision we made in our 2000 publication.
- (Mary): Right, OK. OK, so this is – these are the populations in the study area, OK. So then the ratio's comparing the percent of people residing within three miles of an (IHO) in blocks with people of color compared to blocks without people of color?
- Steve Wing: No, that means that there's a – what we have is the population of each of the categories the percent people of color that lives within three miles in a census block within three miles of an (IHO) divided by the total population give the percent of people in that group that live within three miles of an (IHO). The ratio column is the ratio of each of the categories above zero to the proportion in the zero category.
- (Mary): Right.
- Steve Wing: And it's a way of comparing to look for whether there's a trend across the categories of people of color.
- (Mary): OK. Ok And then the 95 percent CI, can you explain that?



Steve Wing: That's CI stands for confidence interval. There's for each of the ratios there's a statistic called the standard error and the 95 percent confidence interval is a standard way of expressing that. It's the standard error times 1.96 subtracted from and added to the prevalence ratio. And it gives an idea of the amount of data that each of these ratios is based on. So, narrow confidence intervals and these are narrow shows that, if a few people were moved one way or the other it wouldn't make any difference to the prevalence ratio. It's a very stable statistic.

If for example looking at the 0.75 in the second row, the confidence interval is 0.74 to 0.75. So you could move people back between categories and it wouldn't result in much change. But if the confidence interval were say 0.30 to 2.8 then by moving a few people you would get quite a different prevalence ratio. And we provide these confidence intervals because they're very standard. I didn't spend much time writing about them.

(Mary): Yes, that's all right.

Steve Wing: And but if this report were to be read by an epidemiologist or a statistician or an economist or someone else who uses these kinds of statistics they would expect the confidence intervals to be provided.

(Mary): OK, thank you. OK now we were going to look at the 2000 study. Do you have that with you by any chance?

Steve Wing: I'm sure I haven't kind of – no, I have to open it up. Just a moment.

(Mary): OK. Well you know maybe we don't need to have you look at it in particular but ...

Steve Wing: Yes, I remember it pretty well.

(Mary): OK. Was there the difference between the way you counted you developed who was impacted how you counted the people seems to be slightly different. So maybe if you could just ...

Steve Wing: It is slightly different and I can explain that.

(Mary): OK.

Steve Wing: So in the 2000 study we wanted to analyze both race and poverty. Poverty is not (inaudible) it's available for census blocks. Census blocks are the smallest enumeration unit used by the U.S. Census Bureau. Race is available at the census block level but not poverty. Block groups are larger geographic areas.

And that study was based on whether there was an (IHO) in the block group because those areas are large enough to be able to contain potentially numerous (IHOs). In the current study we were not looking at poverty and that's because of the way Title VI is written. We just were looking at race and ethnicity. So we could use the census blocks which are much smaller and they would be more specific to counting people and their proximity to the (IHOs). So they are less heterogeneous because they're smaller.

Furthermore, we had the benefit of 15 years or so of research where we were getting an idea of more quantitative idea of how far away people could be impacted by the air pollutants from these facilities and we chose three miles. At some point any particular radius is arbitrary. Three miles had been used in some of our prior work and based both on our measurements and our interviews with people we felt that it was clear that people can be – can experience negative impacts of the air pollutants at that distance.

So in the latter study the 2015 report, we considered people potentially exposed if they lived in a block that was within three miles of an (IHO) as opposed to the first study where people were potentially counted as potentially exposed if they lived in a block group, a collection of blocks that had an (IHO). And the difference is because of number one, our focus on race and ethnicity and number two, our increased understanding of the distance over which these facilities can affect people. Does that answer your question?

(Mary): That answers it perfectly, thank you. And it answers another question that we had about you know over time it seemed like the – you had, there were different distances in different studies but the more recent ones we're seeing seem to be focusing on this three mile distance and so ...

Steve Wing: And I would call your attention to the most recent study that was provided in your materials published just earlier this year in which we measured hydrogen sulfide at public middle schools. And in that study the quantitative relationship between the hydrogen sulfide levels at the schools and the area of the swine farms that are up wind is about three miles, five kilometers.

(Mary): Right, right yes I read that. And I have a quick question about that study. As I read it, what I understood it to say is that the monitor was placed downwind meaning the wind blows from the (case load) to the monitor at the school and that the measurements of the (hydrogen sulfide) tended to be higher when the wind was not blowing, when the air was just kind of hanging around.

Steve Wing: OK, let me elaborate ...

(Mary): But there was no (measurable), OK.

Steve Wing: Just to clarify that.

(Mary): OK.

Steve Wing: The monitors were at the schools continuously for several weeks. So during the time the monitors were at the schools the wind blew from different directions and sometimes it was wind speed was below what's detectable so the air was pretty still. So the monitors were in place during all those conditions whatever direction the wind was coming from or however fast it was blowing. And what we found was that the hydrogen sulfide levels were very strongly correlated with the number of – with the area of the swine farms up wind at the hour that the measurement was made.

So basically we took all the hours that were during which the monitor was operating at the school, we divided the weeks up into hours and for each hour we assigned a wind direction and a wind speed. And for those hours when the wind was coming from a direction where there were IHOs and more IHOs and more nearby IHOs the hydrogen sulfide levels were higher.

(Mary): OK.

Steve Wing: And when the winds were coming from other directions the hydrogen sulfide levels were either undetectable or lower.

(Mary): Thank you, that was very helpful. OK, so that was a digression. We're going to go back to the – we're going to go back to the 2000 study and the 2015 study. Were there any critiques or criticisms of the 2000 study when it came out?

Steve Wing: Well I received some verbal criticism and concern. I'm not aware of you know any publications or letters to the editor or to the journal or anything like that that challenged any of our findings or our methods.

(Mary): And what – and by verbal criticism what do you mean?

Steve Wing: Well, (in) maybe it was early 2000 I presented a version of this paper at the annual meeting at the Society of Toxicology I was invited to present the results there. And after I presented the results there was some press coverage and I was called to the North Carolina branch of representatives agriculture committee to testify about this study. And some of the legislators were they seemed to be concerned about our findings.

I wouldn't say that the criticisms were about – they were not like scientific criticisms about how we analyzed the data or about the quality of the study. It was about our findings that there was this disproportionate impact. Actually I don't know if you have a copy of it but I wrote an article about that experience, that includes a description of that of my appearance before the house agriculture committee. I think it was published in 2002 and it also describes the Pork Council's use of the Public Records Act request to try and obtain confidential information about the study participants in one of our subsequent studies.

And if you're at all interested in the potential that researchers might be might face some kind of intimidation tactics when they research this topic I could send you that paper.

(Mary): Yes would you please.

(Jeryl): Dr. Wing, this is (Jeryl Covington). I do have one question about your presentation at the legislature. Do you have a copy of or do you know if that was a recorded meeting or open to the public where minutes might be available from your presentation?

Steve Wing: You know I've never seen any and I don't know, I really don't know whether there was a recording or minutes were taken.

(Jeryl): OK. Do you know if you were in a recordable room in the Archdale building?

Steve Wing: I was in the Archdale building in a committee meeting room but I don't know what their technology was.

(Jeryl): OK.

(Mary): OK, thank you. So ...

(Marianne): Let me – this is (Marianne). Let me just say we'll work with Steve to collect all this stuff and then we'll send it on to you.

(Mary): That's great. Thank you.

Steve Wing: And I would also mention you know just (in turn) that there were some pork industry lobbyists at that meeting who approached me after the public session to express their discontent.

(Mary): You mean after the – after you gave your testimony?

Steve Wing: Yes, that's right. And so these criticisms are not written or public to my knowledge but you ask if there were criticisms and that's what you know in particular what stands out for me.

(Mary): And is that were those – do you have that recorded in the article you wrote?

Steve Wing: Yes, I have some information in that yes.

- (Mary): OK great, thank you. Well the next question was like a follow up to that as to whether anything you heard about the 2000 study led to a change in the methodology for 2015.
- Steve Wing: No.
- (Mary): OK.
- Steve Wing: As I said, the criticisms that I heard were not about how the study was conducted or the data quality or the analytical methods. It was only about the findings and our interpretation.
- (Mary): OK. And maybe just can you just tell us what the basis was, what the criticism was about the findings?
- Steve Wing: Basically it was the criticism was well what do you expect? This is where the industry goes and it's poor and communities of color.
- (Mary): What? No he's saying that ...
- Steve Wing: So basically the point that this shouldn't be surprising and it's not really news or anything.
- (Mary): Right, OK. OK, so the 2014/2015 study did – was that sent to it was well. I guess the 2014 study was sent to North Carolina because it was attached in DEQ, NCDEQ because it was attached to the Title VI complaint, right (Marianne)? They got it because it was one of your exhibits and you sent everything to them when you filed the complaint?
- (Marianne): I think that's correct but we will double check that.
- (Mary): OK. Did you bring that 2014 study and or the update the 2015 study, other than as a part of the Title VI complaint for the 2014 one to North Carolina DEQ's attention?
- Steve Wing: No, no I didn't work directly with them.

(Mary): OK. (Marianne) did you by any chance when you sent it to us the update did it go to them?

(Marianne): I don't believe it did but I can check that.

(Mary): OK. So have you ...

Steve Wing: So just to clarify for me, DEQ is aware of the civil rights complaint. Is that true?

(Mary): Yes.

Steve Wing: They have a copy of the complaint, is that true?

(Mary): Yes.

(Marianne): So I'm going to double check this but my recollection you know we before filing the complaint we submitted comments on behalf of a number of groups. You hadn't done the analysis yet but raising the concern that there was a disparate impact based on all the research that had been done up till that point and asking DEQ to do a disproportionality analysis and a disparate impact analysis. Then when we filed the complaint we – my recollection and I can I'll again double check, my recollection is we gave them a courtesy call and we sent them a copy as well.

Part of the reason I want to double check is I recall that there was one confidentiality issue and I recall our needing to let both EPA and DEQ know that that one particular map needed to be redacted and that we would send subsequent information. So my recollection is that we sent DEQ the whole package the first time around. Now when we've sent EPA subsequent filings I don't believe that we have sent DEQ additional information. And of course we went through mediation and in the mediation it was clear that they had received the complaint and it's not clear that they had read it but they had received it and you know, by that time it was more than a year had passed. So they definitely have the complaint and the study, the first study but I will check to confirm all that.

- (Mary): OK, thank you. So since – and maybe this is addressed to both (Marianne) and Dr. Wing. Since – have you heard anything from DEQ about the 2014 one? Because if they got one that would be the one they got, right.
- Steve Wing: I haven't heard anything from DEQ directly. In fact but that's not unprecedented. They've never contacted me about any of our research.
- (Mary): OK, well that's going to short circuit a lot of our questions coming down the line here. So we'll get (inaudible).
- Steve Wing: They've had you know they've had some of them research. I feel quite confident including at the North Carolina environmental justice summit. But they have not approached me with any questions or requests for further information.
- (Mary): OK. So for the 2014 study I guess I'm debating whether to ask this but I'm just going to go ahead and ask it. So ...
- (Marianne): And (Mary), I'm sorry can I interrupt you? When you say 2014 study can we just be clear about which one we're talking about because we I think we've – you're not talking about the updated and that disparity analysis that came out in October.
- (Mary): Right, I'm talking about the – well, we can say the 2014/2015 study. But I'm my assumption is that it wasn't made – the 2015 update had not been sent to DEQ. The only thing they would have gotten thus far is the 2014. So the question is just you know has there been any feedback from North Carolina DEQ on the '14 or the update? And the answer seems to be no.
- Steve Wing: From my knowledge correct (and there's been) no response.
- (Mary): Have you had – has there been any response or anything from the pork industry?
- Steve Wing: Not to my knowledge.
- (Mary): OK.



Steve Wing: And this is a topic which is a little bit sensitive. I realize this is not your question directly but I should mention, I believe you have a copy of the letter that I and some of my colleagues sent to (Christine Lawson) at DEQ before the new general permit was approved.

(Mary): Yes.

Steve Wing: You know I have to, I should let you know that I was told by an official at the National Institute of Environmental Health Sciences that I had violated their policy for (external) researchers by sending that letter. So my contacts with DEQ are of concern to the funding agency that supported most of the research described in that letter because their – they have told me that although there was a request for public comments on the general permit which is what I was responding to, that I was only supposed to inform public officials about our research if I was asked as an individual. And so this is another kind of difficult issue regarding working under federal grants is the National Institute of Health apparently has some concern about informing government officials about research conducted with support from NIH.

And so this is – and the reason I bring it up is because it's to some extent, well to a large extent a disincentive for me to engage in any conversation with government officials including DEQ ...

(Mary): I see.

Steve Wing: Unless they initiate it.

(JerylJeryl): Dr. Wing let me ask you when they, when you receive that information was that one of the stipulations of grant you accepted? That's what they were outlining for you?

Steve Wing: It's not in the grant but it's a policy that was adopted I believe in 2014 but possibly 2013.

(JerylJeryl): OK. But your presentation, your public comments would have preceded that policy initiation or just in the same timeframe of the general permit being

issued? Which came first, the policy or the public hearing request by (DENA) at the time when the general permits were being renewed?

Steve Wing: OK, so I'm looking at the date of my letter to (Christine Lawson). It's December 2013 so I'm off by a year. I just slipped there. So the policy came out I believe in 2013 or possibly 2012.

(JerylJeryl): OK because I'm looking at – I'm looking at one of the postings for the public meeting on the general permit it's dated October 28th, 2013.

Steve Wing: Right, I did not appear at that meeting.

(JerylJeryl): OK.

Steve Wing: The admonition that I received from NIEHS was about the letter that I wrote.

(Marianne): So that is referring to – I'm sorry. Is it exhibit two of the complaint filed in September of 2014.

(JerylJeryl): Right, his comments on the general permit.

(Marianne): Correct.

(JerylJeryl): Yes.

(Marianne): And can I just (while) I've interrupted already, the CC list that you asked about on the complaint filed September 3rd, 2014 with your initial study and all of the exhibits included (Christine Lawson) division of water resources at (DENA) and (Tom Reeder) division of water resources at (DENA). So (DENA) received, now DEQ received the original complaint with all of the attachments including the 2000 and – what we're calling the 2014 disparities analysis. We did not have that CC list on the subsequent letter we sent on April you know or other correspondence that we have.

We're assuming that the office of civil rights is collecting information from DEQ that we're not receiving and we are sending information to the office of civil rights that we similarly are not giving to DEQ. So we didn't, it's my recollection that we did not send that – any subsequent information after the

complaint. We got no response to the complaint and then we did not send any additional information nor did they ask for it after sending the complaint.

(Mary): OK. All right, thank you. Actually I just want to ask a question about NIEH. Maybe we can talk. So prior to that policy it would have been fine for you to send comments in on a general permit?

Steve Wing: That's my understanding.

(Mary): OK. For the 2014/2015 study are there any areas that you – any adjustments you'd make to it or that you, you know would explore if you had more time, money you know whatever however you might want to adjust it?

(Marianne): Before answering just so I'm clear, (Mary) when you call it the 2014/2015 study I'm not clear what that is. Can we call the first study 2014 and then the updated study so we just distinguish between them?

(Mary): Sure. The 2014 study that was updated in 2015.

Steve Wing: Right. I would you know if I had had time and support I would potentially shorten the report for submission to a peer review publication but I wouldn't change the analysis.

(Mary): OK. Are there any plans to have it submitted for a peer review or publication?

Steve Wing: It's something I want to do but I've been occupied by other concerns and so I haven't done it yet.

(Mary): OK. Well our next question was about the distances and we went through that. We did the 95 moratorium. OK so now we're going to – now we'd like to talk about the renewal, the general permit and the renewal processes. And so we have your comments for the 2014 process. Did you participate in any of the previous renewals providing comments and your studies whatever the studies you had to that point you know to DEQ?

Steve Wing: No, I did not.

(Mary): So this was the first one? OK. All right so now we're going to – we're going to run through the North Carolina specific study and we're kind of going to ask the same questions about each study. And starting with the your 2000 study about occupational and community health effects. So the – well basically the questions we're going to ask are you know was that, did you or are you aware of that study being brought to the attention of North Carolina DEQ or any other state agency?

So for example the first one is about occupational health you know was it sent to any other state agency that might have jurisdiction over the issue and then to any local agencies? And if so was there a response to it? Were any actions taken after they heard about it? And then depending on the study just we're just asking if the methodologies that were used like in their study were they the kind – is it the methodology that would be used by North Carolina DEQ's air quality division? Or if it's a water analysis were the protocols there the kind that DEQ would use?

So we're just going to sort of march through each study and ask these questions.

Steve Wing: OK so ...

(Mary): Do you want to take a – do you want to take a break or anything?

Steve Wing: I think we can keep going at this point.

(Mary): OK.

(Marianne): Can I just mention before Dr. Wing answers from his point of view that I don't know the full range of ways in which DEQ might have seen these studies, heard about these studies you know government meetings, professional organizations. We know something about and Steve you can talk about the you know you've already mentioned the summit and their appearance at the summit. But I do at least want to point out that in December of 2013 you have it as exhibit three attached to the complaint, Earth Justice, Water Keeper and Southern Environmental Law Center submitted comments on the permit

renewal that's the subject of the complaint which cites to many of these studies just looking at it quickly.

For example expert note 18 cites to Wing and Wolf among others. Footnote 21 cites to Wing and all potential impact. So I don't know how Dr. Wing would possibly have known all the ways in which that information might get to DEQ but you have in your possession at least one example of ways in which that was formally presented to DEQ before they made the decision on the permit.

(Mary): Yes, yes. And that's sort of what – we're only asking him what he knows about not, you know the ways that he knows it that it may have been brought to their attention. So the idea being these studies you know we're going back to 2000 there have been – general permit has been renewed a couple of times, right in this intervening time period. And so what I'm trying to see other than the fact that he has just said that he didn't participate formally in the hearing process, submit written comments into previous renewals, is he aware himself because maybe he didn't or he participated in you know some meeting with the DEQ or whatever where they were made specifically aware of the studies. OK?

(Marianne): Yes, I mean go ahead. Yes, I want to make sure you use his expertise and time efficiently but feel free. Keep going.

(Mary): So and I understand they were all brought – they were all brought to the attention of the DEQ in your comments in 2013. What I'm trying to get at is prior to that have there been prior instances where any of these studies were formally brought to their attention. That's what I'm trying to get at. And you know we can march through all of them or just if there's a general answer of that he can give that's fine too.

Steve Wing: Well I can say that the Wing and Wolf study from 2000 that (Marianne) just mentioned, that study was the results were first released by the North Carolina department of health and human services before the paper was published in the peer review journal. And I can't believe that they would have been

unaware of that because there was press coverage and so on. But I didn't send it to them directly and I don't know if DHHS did.

Other than that I can only give the general answer that they have had personnel at our environmental justice summit where some of this research had been presented and discussed in addition to they having the opportunity to hear from neighbors of these facilities who described their personal experiences and difficulties and impacts of the air pollutants on their quality of life, ability to use their property, their health and so on.

(JerylJeryl): Dr. Wing this is one question. You said at the environmental justice meetings that have happened the network meetings you said (DENA) or DEQ representatives were there. Are you meaning the secretary or members of the water quality section? Who are you referring were at the EJ network meetings?

Steve Wing: I don't have a list of who was there but I'm sure the secretary never came, I'm sure (Christine Lawson) came. I don't know what years. I don't have a record of that. And I believe other DEQ who are department of environment and natural resources staff came and there's when (Christine) did not come.

(Mary): So the environmental justice summit, I mean (Marianne) do you have information on these meetings when they occurred and who they were with or?

(Marianne): Yes, we can get you more information about that.

(Mary): All right, yes. So the – so maybe we can follow up on that later and sort of figure that out. But it sounds like what you're saying is that over the years there have been a series of these meetings, DEQ's been invited and DEQ officials have shown up and that and you've made presentations there about your research.

Steve Wing: I have and so have other colleagues who participated in these studies.

(Mary): OK.

(JerylJeryl): And this is (JerylJeryl) again. I have one question. You mentioned that the department of health and human services released your Wing Wolf 2000 study. What were their comments to that? What reactions or follow up did you get from the department of health and human services?

Steve Wing: they actually provided financial support for that work. So their announcement of the findings took the form of a press release basically describing the results of a study that they supported.

(Mary): And then what happened? Then ...

Steve Wing: Then what happened was on the same day that the press release came out the North Carolina Pork Council file a Public Record Act request. It was to me and my colleague Susanne Wolf copied to the UNC general counsel as well as to the DHHS division that funded the study demanding under the North Carolina public records statute all records associated with this study including the identities of the participants who I should note we had to protect their confidentiality in order to do this study under federal regulation.

(Mary): OK. So this was partially funded by the federal government or it came a grant through the state?

Steve Wing: Partly funded by NIEHS and partly funded by the North Carolina DHHS.

(Mary): OK, OK. And so did the department of health do anything after just releasing the study? Was there any sort of change in the world?

Steve Wing: You know I'm not sure. You know unfortunately what you're pointing out or the line of questioning is pointing out is how isolated many of us academic researchers are from the policy arena. And this is part of academic culture and it's reinforced by government agencies that are concerned that we would actually influence policy, the NIH policy to (inaudible) and we're not supposed to contact public officials.

So I've spent most of my time and effort getting the research into the open literature. I've spent some time with reporters. It's been covered not only by you know in the academic journals but to some degree by periodic journalist

reports. But I'm not working in a culture that has close connections with the regulators and you know I think that's a problem and I will admit to you that it is. But partly we can't all do everything. And given the pressures to keep our funding and teach and advise students and so on which I have to do to keep my job, it leaves limited time to engage in dialogue and routine conversation with regulators.

(Mary): OK.

Steve Wing: I mean just to explain my situation.

(JerylJeryl): Yes Dr. Wing let me ask one question here. You mentioned funding. After you did the publication with the department of health and human services the press release was submitted and you got the request for information by the Pork Council, did that impact your funding that was issued - Was – did you view that as being retaliatory in nature the request ...

Steve Wing: At the same time I know there was a pork industry request that came through a U.S. senator for NIEHS to investigate our grant. I was told that by our grants officer at NIEHS. We maintained our funding at that time so they did not determine that we had done anything wrong presumably. But at – I mean it took a lot of time and grief to deal with that but I don't believe at that time it influenced our funding from the federal government.

(JerylJeryl): What about at the state level because I'm assuming that there was a pass through of the federal funds to the state level department of health and human services?

Steve Wing: No, actually the funds we got from DHHS North Carolina DHHS were not federal funds, they were state funds. And we did not receive any more state funds for this kind of work ever again.

(JerylJeryl): OK. Let me ask you this and I hate to go back but on the press release from DHHS do you feel like they were supportive of your work, dismissive of your work? What you know I want to I guess get clarity what did ...

Steve Wing: Right. I believe they were supportive of our work.



- (JerylJeryl): What did they do with – what did they do to further it? You said that you received no other state grant but what did they do to further the study that you and Wolf prepared?
- Steve Wing: I'm not aware that they – I'm not aware of what they did beyond make public the findings. I mean I've always presumed that the North Carolina department of environment is not in a vacuum. It's insulated from all information on the outside produced by government and academic scientists. Now, maybe I'm naïve about this but I've assumed that there was at least through press coverage or some other means that there was some way that they would know about something that happens outside of their department.
- (JerylJeryl): Now even with that press coverage can you go back and clarify for me, I apologize. I just want to make sure I understand. Were you contacted by any other agencies or any other industries besides the Pork Council after the press release by DHHS?
- Steve Wing: No.
- (JerylJeryl): OK.
- Steve Wing: I mean I was contacted by people associated with the pork industry in writing, also by phone.
- (Mary): And can you just talk a little bit about that?
- Steve Wing: Well the part in writing was the Public Records Act request. I also received at least one phone call, maybe more than one from someone who wanted to talk with me about getting the identities of the study participants. And then gosh that reminds me, I also had some kind of bizarre voicemail that was accusing me of gosh I don't remember, may have called me a communist or something like that but I didn't pay really pay any attention to it.
- (JerylJeryl): Let me ask one question. Who – since you lost this particular state funding, who's funding you at a state level for your continuation in this particular area if you don't mind?

Steve Wing: We have received no further state funds since 1999. I should say that the state health director at that time in 1999 was interested in the problem of these industrial swine operations and their impact on neighbors but he did not continue in his position beyond 2000. So I think it was partly through his interest that we were funded.

(JerylJeryl): How many applications or submissions of study details have you presented back to DHHS or any other state agency for potential funding?

Steve Wing: We have not. They to my knowledge they do not have (external) grant programs set up to fund researchers like me. The one that we had, the funding we had for the 1999 study which was published in environmental perspective in 2000, that study you know Wing and Wolf study was funded because we were collaborating with epidemiologists at DHHS. So it wasn't as though – we didn't apply for it independently.

We were actually collaborating with them because people in DHHS believed that there were problems that needed to be documented. And so they were present at the design phase of that study and participated in deliberations.

(Marianne): I'm this is (Marianne). I just want to be cognizant of the time and aware that we sent to you the office of civil rights a tremendous number of significant peer review papers on you know on the impact of hog operations on children, on health effects, on a variety of outcomes. I'm sure you all are watching the clock too but want to make sure you have time to ask Dr. Wing if you have any methodological or other questions or questions about his declaration as well.

(Mary): Thank you. We don't actually have any questions I guess (Marianne). We've read the studies, we don't have any questions on them right now. And you know to the extent we do we'll follow up and you know either you know work with Dr. Wing if he's available or you know the co-authors if that's possible you know like we were doing before.

So really the last question we had because this was the – this was the information we were most interested in right now was you know Dr. Wing's particular perspective from working in the area for a long time and getting an

understanding of how North Carolina has been you know apprised of this from perspective only and then what responses there may or may have not have been to them. And so you know sort of a wrap up question that we had was if you'd had any other if you had any Dr. Wing had any other – had interactions with North Carolina DEQ outside of the EJ summit which it sounds like there was some and submitting the comments in December 2013.

You know any interactions that you've had with North Carolina DEQ or any other part of the North Carolina government either the department of agriculture, labor you know HHS over the issue of regulating swine (cases)?

Steve Wing: I'm sure I can say very little. I should before I say definitively I could check my list of presentations that's on my CV. I'm trying to remember. I think they were mostly there was an EPA presentation but maybe not to – not to North Carolina's DEQ.

(Mary): OK.

Steve Wing: Now here it is. Now let's see, no hold on that's not it. Sorry, I wasn't prepared for this question.

(Marianne): In your legal research and testimony section, page 30 of your CV says the state of North Carolina, Wade County office administrative hearings there was a case that was involving North Carolina there. That has been a ...

Steve Wing: Right. That was not about swine operations.

(Marianne): OK.

Steve Wing: But there is a section of my CV that begins on page 16 and which includes many public presentations about these – about this topic as well as other topics I've worked on the course.

(Mary): OK.

Steve Wing: It includes academic meetings in universities met.. At North Carolina State University where I'm pretty sure the one in 2010.

(Mary): The November 11th, 2010?

Steve Wing: Yes, that one I'm almost positive there would have been DEQ people there but I can't give you any names.

(Mary): OK, that's all right. That helps.

Steve Wing: And (if I) quickly scan through there I might be able to call your attention to another one.

(Mary): Do DEQ people ever come to your school and participate in any of the presentations that you have in UNC?

Steve Wing: Not to my knowledge.

(Mary): Or your presentations at Research Triangle Park?

Steve Wing: Not to my knowledge.

(Mary): OK. In your experience have you ever seen any evidence that suggested that the swine farm industry – well that North Carolina has better non-minority communities from the impacts from swine farms? Is there – is there ...

Steve Wing: Well I can give you my opinion on that.

(Mary): OK.

Steve Wing: And it's I believe it's informed by experience although it's not something I could give you an equation and make a calculation of my conclusion here. But I strongly believe that these facilities would not have been permitted to operate as they do if they were primary locate – primarily located in predominantly white areas in the in other parts of the state. The facilities have extremely obvious impacts. If you go there if you I mean and you could now – let me make clear.

You could go there for a day and maybe there wouldn't be much air pollution on that day in the place you went because it's not constant all the time. And the other thing I can say is not every one is affected the same way. Some

people are more sensitive than others. And what's presented in our research are the average effects among people in the study not that everyone is affected the same way.

But those caveats aside, the effects of the air pollution from these facilities are obvious and they impact a large proportion of the people exposed. And I believe they would not be tolerated by people who have more political clout and ability to harness resources to protect themselves. I believe that this system exists as it does currently because historically eastern North Carolina is part of what's called the black belt. Many people descended from slaves who worked on plantations in that region prior to the civil war.

It's politically disenfranchised, there's a great deal of intimidation that dates back to slavery days and through (Jim Crow) and lynching and school segregation which is still a great problem. And the population there has not had the resources and has also had the historical exploitation and oppression that's preventing them from being able to insist upon having decent environmental regulations that would protect them from pollutants that would not be tolerated by others. So I think you know that's what we have is as a system would not exist if eastern North Carolina was similarly demographically and economically to for example the part of the state that I live in the Piedmont in The Research Triangle area or Charlotte or Winston Salem or Greensboro or other areas that are better off.

The industry was only able to flourish in this manner because of the characteristics of the population in eastern North Carolina. I hope that addresses your question. I realize it may be broader but.

(Mary): Yes, I think it does. We did have a question about in your – in your declaration you mentioned that in Iowa the lagoons are underneath facilities. And we were just wondering you know I mean I can imagine why they were not done in North Carolina but if you would like to expand on that statement for us. Like what you know what is it – can you talk about it and how is it that that it didn't develop this way in North Carolina?

Steve Wing: Well one facet is that the water tables in eastern North Carolina are very high. So the org waste lagoons in North Carolina store waste to some degree below ground but also above ground because the earthen dams are mounded up above the grade of the land and that's a factor. There's also a factor of temperature you know the climate's different. There may be other reasons. I'm really not familiar with how the engineering difference is developed between the two states in detail.

(Mary): OK. Did you all have any other questions? Is there anything else that you would like to add? I'm going to ask in a minute. Is there anything else that you would like to ask, I mean like to say Dr. Wing?

Steve Wing: Well, you know I realize that you have research papers and that that's not really the subject matter of your interest today. But since we're on the phone I did want to mention one thing about some more recent studies that as far as how the studies are designed, the older studies tend to be what we call cross sectional studies where exposed populations meaning people who are living or attending schools near these facilities are compared to other people who live or attend school farther away. Those studies are common and widely used – it's a widely used design in epidemiology. But they are always subject to questions about how comparable the study population the exposed and unexposed populations are. And because there's no follow up in time they're – it's always possible that the people who have the illness had it before they were exposed because we don't follow them up.

But all the more recent studies they come from a design that is not so often used in epidemiology but it's a very strong design. And those are the studies in which we measure the pollutants in people's neighborhoods and we show that their symptoms increased when the pollutant levels increased. And I mean by their symptoms their ability to engage in daily activities of daily living. Their mental health, their physical health including symptoms and blood pressure and so on and lung function.

And those studies rather than comparing people who live next to the hog operations to people who live elsewhere, we compared each person to her or himself meaning that they were their experiences when the pollutants were

present compared to the same person's experience when the pollutants were lower or absent. And it means not only do we have certainty about the timing that the effects occur after the exposures but the other factors that might differ between exposing populations and unexposed populations in cross sectional studies. Things like diet, exercise, occupation, body weight and so on, medical history. Those are not factors in these more recent studies. And this is something that has been pointed out as a great strength of our more recent work that it really does resolve some of the questions that might be raised about the earlier studies.

I just wanted you to be aware of that.

(Mary): Thank you, yes. I actually had noticed that but I can't remember which study it was where it was explained, you explained that.

Steve Wing: Oh good. OK, well I apologize for ...

(Mary): No I'm sort of going through I'm trying to remember which study it was that I was reading that had that explanation about how you were doing a (inaudible). So but thank you for you know pointing that out and pointing out the idea about the difference between the older studies and the newer ones and ...

(Marianne): Do you all have more questions? There are a couple of things that I wanted to make sure we got out but if you have more questions I'll wait.

(Mary): No. The only question that we had (Marianne) and I think it's probably it may be better addressed to you I don't know and it might be a quickie which is we were reading the change.org petition that **Ex. 6 Privacy** had written and in it she mentions that even when she that she smells the odors inside her house, even when she shuts the windows as the health department has advised. And so we were trying to – we've been looking around trying to figure out what you know where that came from the health department has advised. Like do you know what that means what that advisory is, how it comes out, how it got to her, what she's talking about?

So it's not necessarily for Dr. Wing unless he happens to know the answer but which health department even?

(Marianne): I don't know off the top. (Elizabeth), do you know off the top of your head?

(Elizabeth): No.

(Mary): OK. Well then ...

(Marianne): We can ask Ex. 6 Privacy hough and you could interview Ex. 6 Privacy I'll also look back at her declaration to see if there's any more detail. I assume you've already done that.

(Mary): Yes, we did. Anyway just it was just if you happened to know the answer off the top of your head otherwise yes, we can go down that path. OK, so you wanted to make sure some things got brought out (Marianne)?

(Marianne): Yes. And frankly I thought there were going to be more questions and if we had more time I think it would be important to ask more about some of Dr. Wing's studies. We talked a little bit about the methodology of the 2000 study as compared to the you know the disparities analyses. These are some of the seminal studies in the area and we have the good fortune I suppose of having them on the you know the particular facilities at issue here.

So sometimes when looking at whether facilities have an impact where by analogy or trying to say well something that happened somewhere else how does it affect here, there's a you know 2006 asthma symptoms study, the 2006 race poverty and potential exposure of middle school students, 2008 air pollution and odor, 2013 air pollution ISOs and blood pressure. Some of this was really path breaking community based participatory research. I also thought it could be helpful to get if you had any questions about the scope of Dr. Wing's expertise, you know to some degree the CV speaks for itself but I want to make – you know if time permitted I would want to make sure that if you had any questions that would be in your record.

But let me – let me just start with a couple of things that we didn't touch on at all that might not be as self evident. We talked about exhibit two which is the letter to (Christine Lawson) from December 2013 and Steve you asked about in that letter asked for the permanent list to create records to document



environmental and health impact. Was there – there was a large question about did you get any response at all but do you know are there more records available now? Was there any response to that particular request? What happened with that and why did you focus on it?

Steve Wing: I'm not aware that there have been any changes in the availability of records. At the time I was particularly looking for information on daily spring times and amounts of the application of liquid manure broadcast into the air in hopes that we might be able to use that information in our studies. But unfortunately I haven't been in a position to follow up on that.

(Marianne): We talked a little bit earlier about I think the whole – this interview started with why did you focus on swine and you mentioned the historical origins. Can you share – I guess I have two questions about the relationship between swine and poultry just to make sure this is discussed explicitly. One is the different geographic location of swine and poultry even as the poultry industry has expanded. So that's my first question.

Can you describe why we don't have perfect information about dry litter facilities for starters but also to the extent we know where those facilities are located to what degree they're co-located and to what degree they're in different places. And then I want to talk – ask a little bit about cumulative impacts in co-location.

Steve Wing: Well because the turkey and chicken facilities the broiler facilities are not permitted by the department of environment we don't have records of their locations. My understanding is that this goes back in part to post 9/11 rules that supposedly protect these facility's locations because of concerns from bio terrorism but I'm not able to rehearse in detail the rationale. But in any case we don't have latitude, longitude coordinates for the poultry facilities except for those few that use liquid waste management systems and therefore trigger the DEQ permitting.

On their geographic location just by county or by some remote imaging work that's being done there are – there is a concentration in eastern North Carolina which includes the two top turkey dense counties in the nation which are also

in the top hog dense counties in the nation so there's clearly co-location. But there's also another area of fairly intense poultry production in the western Piedmont of the state in rural areas between The Research Triangle and Charlotte and north and south of that line and these are dry litter operations again, they're not liquid waste facilities. I think where they are co-located where the swine and poultry facilities are co-located they definitely have a potential for accumulative impact because it means that there can be animal waste in the air blown from more directions.

And the poultry waste is actually harder to track as far as its spatial impact because being dry it can be transported some distance before it's applied to land. And it's that land application process that results in the most acute release of particles because the dry litter is broadcast from the newer spreaders but it doesn't necessarily occur at the site of the CAFO, at the site of the buildings. So there is that's another issue that makes for complexity in conducting research on the spatial pattern of the impact.

(Marianne): Is there – speaking as an epidemiologist or from your experience, is there any way of taking account of the cumulative impact of poultry? If you were looking at the impact of these hog facilities in eastern North Carolina is there a way you could take account of the cumulative impact or you know assess multiple exposures and/or assess also other indicators of vulnerability in the population?

Steve Wing: Yes. In fact this is the subject of a grant application that we submitted to NIEHS in which we proposed to collect particles in people's neighborhoods where they live both swine and poultry and to analyze genetic markers in the particle samples for DNA from bacteria that only live in the gut of swine and other bacteria that only live in the guts of poultry so that we could partition the particle mass present in the neighborhood into the proportion that comes from swine versus poultry. And then look at the impacts on people's health and quality of life when only swine is present, when only poultry is present and when they are both present together compared to when neither are present.

So we actually have proposed a method to do just what you asked about. Unfortunately that proposal I have to say was not funded. I submitted it around the same time that I wrote the letter to (Christine Lawson). And sometimes I fear that there may be a connection between my having violated one of their rules and the fate of our proposal but I don't have any evidence of that.

(Marianne): In the absence of that new research is there – it doesn't have to be a you know I think what you've called a cookbook method of the assessing multiple exposures but how would you take that into account or could you take cumulative impacts or ...

Steve Wing: Well one thing I would do is I would refer to testimony from residents which I think in my experience much of our formal research has validated what people have reported about their experiences. So we began – I began all this research being informed by the testimony of residents. And one of the things I paid attention to was that the stories people told, the accounts of their experiences were similar between people in different places that don't know each other that suggested to me that they weren't making it up. And there's plenty of testimony about the experience of living near both swine and poultry and I would begin there.

(Marianne): (Elizabeth), do you have any questions you want to ask? I want to make sure we are able to wrap up?

(Elizabeth): No, I think that does it. Thank you so much Steve.

(Mary): Anybody else have any last words (Marianne) or Dr. Wing?

(Marianne): Well my – this is (Marianne) and you know thank you to Dr. Wing. And we will try to collect information and there were a few things that came up during the course of the conversation and we'll try to get that. And if you have any additional questions (Mary) and (JerylJeryl) and others you know feel free to let me know.

(Mary): Yes. And once again Dr. Wing, thank you very much for your time and ...

Steve Wing: You're welcome. This is something that I believe is very important. I think your investigation holds out some hope for many thousands of people who are living with this pollution and we look forward to the outcome of your investigation.

(Marianne): Can I suggest one more question and this is for Steve? I'm aware that this was a complaint that you as a researcher and as a board member of North Carolina Environmental Justice network thought should be brought. Could you share with the office of civil rights why you thought it was important to bring it?

Steve Wing: To bring a complaint?

(Marianne): Yes.

Steve Wing: Well, I feel that as I understand the history that Title VI has been used in the past to address disparities in access to hospitals and schools and public transportation and other public facilities. And therefore there's a track record of bringing about some advancement of the persistent racial inequalities that exist in the United States through this law. But we haven't seen it impact the environment and we still have serious issues with environmental racism and environmental inequality.

And I think often it's very difficult for in the case where the pollution comes from corporate entities it's very difficult to get them to change directly. But the appropriate – one appropriate way to bring about change is when there is a state agency that actually is responsible for setting the guidelines for these polluters. And it's not just about one facility at a time that might violate the Clean Water Act or the clean – or some other rule. It's about the system and permitting.

And in this case as I tried to explain earlier, I don't think we would have this system in North Carolina were it not for the presence of the black belt and its historical exploitation and lack of political and economic resources and its history of racial intimidation. So I think it's a very appropriate approach and it deals with fundamental issues of responsibility and holding our government accountable to democratic principles.

(Marianne): Thanks.

(Mary): Thank you. OK, all right well thank you very much again Dr. Wing.

Steve Wing: You're welcome. I'm happy to answer further questions if they come up later.

(Mary): Great. Thank you so much.

Steve Wing: You're welcome and bye, bye.

(Mary): All right bye, bye. Thank you.

END

Index:

It's a Matter of Wealth, Dismantling Persistent Poverty in the Southeastern United States; Carl Vinson Institute of Government, University of Georgia (I: drive; Black Belt folder)

CAFOs 101 Powerpoint (I: drive Briefings folder)

EPA Enforcement Alert; Large Animal Feeding Operations, Reducing their Impact on Air Quality; EPA 325-F-08-001; August 2008

Risk Management Evaluation for Concentrated Animal Feeding Operations; EPA/600/R-04/042; May 2004

National Air Emissions Monitoring Study:

<https://www.epa.gov/afos-air/national-air-emissions-monitoring-study#2005> Voluntary AFO Air Compliance Agreement

Air Monitoring at Agricultural Operations: <https://www.epa.gov/afos-air> (includes MOU and Statement of Principles with USDA)

Farm, Ranch and Rural Communities FACA: <https://www.epa.gov/faca/frcc>

USDA Agricultural Air Quality Task Force:

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/air/taskforce/>

Agriculture: Laws and Regulations that Apply to Your Agricultural Operation by Farm Activity:

<https://www.epa.gov/agriculture/agriculture-laws-and-regulations-apply-your-agricultural-operation-farm-activity>

<http://www.4cleanair.org/Oldmembers/members/committee/agriculture/EIPCAFOLetter-Appendix%20B.pdf>

Interview regarding Fields of Filth Mapping Tool

12/14/16; 10AM

Christian Breen, Field Specialist, Waterkeeper Alliance

Will Hendrick, Waterkeeper, Pure Farms, Pure Waters North Carolina Campaign Manager

Tina Sigurdson, Assistant General Counsel, Environmental Working Group (EWG)

Soren Rundquist, Director of Spatial Analysis, EWG

Marianne Engelman Lado, Earthjustice

Mary O'Lone, EPA OGC

Daniel Isales, EPA Region III

EWG and Waterkeepers created a series of interactive maps called Fields of Filth available on the internet (<http://www.ewg.org/research/exposing-fields-filth>) "to enable citizens, lawmakers and policymakers to visualize and interpret the state's swine, poultry and cattle operations by zooming in on selected areas." The maps display a variety of federal demographic data and state geographical data, and analyze high-resolution aerial photography. "The aerial images allowed researchers to quantify the length and breadth of pig waste pits, and to determine the locations and numbers of barns at poultry operations. The researchers drew on government and academic data to supplement these analyses."

The email attached below was sent in advance with questions and topics for discussion. The purpose of this interview was to understand the data displayed, particularly the demographic data, to help determine what if any evidentiary use information displayed might have for OCR. The level of granularity (*e.g.*, block group, block) of the demographic data was not clear from the descriptions on the website at that time. While some displays indicated the information was Census block information, it turns out that all demographic data was in fact Census block group data. During the course of the discussion, EWG indicated it may change displays to make that more clear.

At the beginning of the interview, we were all connected to a common screen in the Fields of Filth mapping tool so that we could walk through the maps and data at the same time.

Soren Rundquist explained the delineation of block group-statistics in pop-ups are based on the American Community Survey from 2015. When looking at the map, it may display more land area than is in the Census block group, but the CAFO operations outside of boundary for that Census block group are not counted in the data listed in pop out display of facts and figures. In order to put together the study, they procured geo-referenced points from NC DEQ called lagoons and used that to digitize lagoons. This information was presumed correct-it was not verified.

Christian Breen explained that the project highlights information not publicly available from the state. – specifically the locations of poultry CAFOs. He stated that they did the state's work by determining and displaying the size and locations of poultry CAFOs. EWG digitized the locations of poultry CAFOs. Until recently, poultry CAFO locations were not known to NC DEQ. He said NC DEQ requested EWG's data set. He said many facilities exist in proximity to low income communities and minority populations.

Soren Rundquist explained that they collected geocoded locations and overflight information. With respect to the display of information of flooding impacts from Hurricane Matthew, they documented

flooding in real time with aerial photography. A green airplane icon in one of the maps indicated a confirmed location of a flooded or inundated CAFO.

Christian Breen stated that their photos are geostamped. He said that even though they cannot manipulate the metadata of their photographs and video, historically, NC DEQ has not accepted these as evidence because it doesn't have the political will to use them. However, other departments within NC DEQ have requested poultry information (will forward email from state).

Soren Rundquist stated that the information on the amount of agricultural land within one mile of a CAFO is from the USDA's cropland data layer. He said displaying this information is important because it shows the lopsided amount of waste applied to available cropland. Swine waste is generally applied to land in close proximity to the waste lagoons. He stated that the amount of cropland may be an underrepresentation because not all of that land is actually used for swine waste application. It could be used for agricultural uses in which the swine waste is not used. He stated that this is a concern because the more saturated the land, the more likely it is for pollutants to enter the water.

Christian Breen thought that NC DEQ should know what is adjacent to the swine CAFOs (such as the poultry facilities) and take that into account, but it doesn't. With concentration of swine and poultry facilities the state is exceeding the carrying capacity of the land and waterways.

They pointed out Stocking Head Creek which Waterkeepers has been working to get listed by NC DEQ as impaired under the Clean Water Act. It has high pollutant levels. There is one household along the creek with a septic system and many swine CAFOs.

Soren Rundquist has not visited a field in North Carolina which is not ditched and drained because otherwise it would be under water. He stated they estimated of 14,000 birds per barn which he believes is a very conservative estimate and that frequently there are up to 25,000 birds per barn. They will update the report annually as data sets are updated.



Interview with Christian Breen

12/14/16; 10AM

Christian Breen, Field Specialist, Waterkeeper Alliance

**Ex. 6 Privacy**

Tina Sigurdson, Assistant General Counsel, EWG

Soren Rundquist, Director of Spatial Analysis, EWG

Marianne Engelman Lado, Earthjustice

Mary O'Lone, EPA OGC

Daniel Isales, EPA Region III

At the beginning of the interview we were all connected to a common screen so that we could walk through the maps and data at the same time.

SR explained the delineation of block group-statistics in pop-ups are specific to this group based on the American Community Survey from 2015. The visualization is of block group data and you can observe CAFO operations in that boundary. There are CAFO operations outside of boundary that are not counted; that is the visualization may have additional data. On the data base, where it says block maps, it should have said block group. In order to put together the study, they procured geo-referenced points from NC DEQ called lagoons and used that to digitize lagoons (this information was presumed correct-it was not verified).

CB explained that the project highlights information not publicly available from the state. EWG/Waterkeepers data mined so that people could understand the information; they in fact did the state's work. Until recently poultry locations not known to NC DEQ and NC DEQ requested data set from them. The locations of poultry CAFOs has been digitized. Many facilities exist in proximity to low income communities and minority populations. Block data color coded by number of animals. Base map is just the overlay of animal facilities over the NC map. A user can filter by county, watershed, state.

SR explained that they collected geocoded locations and overflight information. With respect to Hurricane Matthew, they documented flooding in real time. Geolocation of CAFO on one of the maps (green plane means assessment done).

CB stated that their photos are geostamped. Historically NC DEQ has not accepted these as evidence because it doesn't have the political will to use. However, other departments within NC DEQ have requested poultry information (will forward email from state).

SR stated that with respect to the agricultural land within one mile layer, that information considers the generic acreage around that facility's location within one mile based on the cropland data layer from USDA. This information is important because it shows the lopsided amount of waste applied to land. This figure may be an underrepresentation because not all of that land is actually used for application (could be used for agricultural uses in which the swine waste is not used). This is a concern because the more saturated the land, the more likely it is for pollutants to enter the water.

CB considered that NC DEQ should know what is adjacent to the swine CAFOs (such as the poultry facilities) and take that into account, but it doesn't. With concentration of swine and poultry facilities the state is exceeding the carrying capacity of waterways.

SR has not visited a field in NC which is not ditched and drained because otherwise it would be under water. A lot of nitrogen per acre due to the applications and people who live there are greatly affected by this, particularly those with high turn-over rate jobs and with health concerns. The estimate of 14,000 birds per barn is very conservative, frequently up to 25,000 birds per barn. They will update the report annually as data sets are updated.

Interview with **Ex. 6 Privacy**  
12/08/16; 11:00AM

Brent Ducharme, UNC Center for Civil Rights  
Elizabeth Haddix, UNC Center for Civil Rights  
Mary O'Lone, EPA OGC  
Daniel Isales, EPA Region III

In 2007 there was legislation in NC for a lagoon conversion program, which included an advisory committee. Her involvement was for a total of about 5 months and she is not sure if she attended all of the meetings. As part of the program, an application process was set up to determine what the money could be used for (a scoring matrix was developed to evaluate the applications). The State participated in the process, as did representatives from the pork council and producers. Mike Williams from NC State also participated (individual who had been tasked to lead the study agreed upon in the Smithfield Consent Decree).

It became clear early on that there was not much enthusiasm from the pork council. She just recently saw the 2015 report; there wasn't that much communication after the initial meeting. By 2008 there was not much push behind the committee's efforts.

Not aware of much legislative history, but will check her records.

Telephone Interview with: Exemption 6 Personal Privacy

November 23, 2016; 9:30 AM – 10:37AM:

Participants: Mary O'Lone (OGC), Daniel Isales (Region III)

On November 15, 2017, Mary O'Lone briefly interviewed Exemption 6 Personal Privacy North Carolina. At that time Exemption 6 Personal Privacy indicated that she would be amenable to continuing the interview via telephone; accordingly, arrangements were made to speak to Exemption 6 Personal Privacy on this date.

Exemption 6 Personal Privacy indicated that she was not a part of, nor had been in communication with, the North Carolina Environmental Justice Network, the Rural Empowerment Association for Community Help (REACH), the Waterkeeper Alliance, Inc., Earthjustice or the University of North Carolina School of Law Center for Civil Rights. She indicated that she identified as a Native American, specifically as part of the Lumbee Tribe. Exemption 6 Personal Privacy said that she was born and raised in the area Exemption 6 Personal Privacy and that she had family in Exemption 6 Personal Privacy. She grew up at Exemption 6 Personal Privacy NC (where her parents still live) and currently lives at Exemption 6 Personal Privacy NC.

Exemption 6 Personal Privacy

Exemption 6 Personal Privacy remembered when the industrial hog and chicken operations arrived which was around the time she was in middle school (7-8<sup>th</sup> grade). Once the industrial animal operations started arriving their number grew quickly. She did not recall any notice being provided to the neighbors regarding the influx of industrial animal operations, but she did indicate that her parents were not ones to discuss those sort of matters in front of their children. She recalls that at that time the debate concerning the industrial hog operations centered on impacts on the residents versus the potential for new jobs. The area had once been rural with some manufacturing (e.g., Converse), but the manufacturing plants have been closing down.

Once the farms arrived, the summertime became unbearable outside. As a child she would play outside, and used to be in the yard constantly but once the farms she no longer wanted to. The family used to hang clothes outside in the line previously, but could no longer do so because the smell would permeate the clothing if left outside (the clothesline has since been torn down). At times when in vehicles, she would hit a wave of smell, which made activities such as riding the bus difficult as there would be no air; the odor would eventually pass, but they would put their shirts over their noses until the odor dissipated.

Spraying of the fields were done for the winter crops and for the summer crops. The smells in the winter were not quite as bad. Once the fields were sprayed the odor lingered for a week, week and a half. She said she could not observe any waste lagoons from her house or from the road. There was one hayfield which was in proximity to the house. With respect to spraying, she observed both trucks spraying and a centralized spraying system which would radiate out. She could not recall any runoff from the spray fields, but she said she was not looking for it.

Her parents' house has been and is on county water so there were no increased water costs associated with the influx of the industrial hog operations. Prior to the industrial hog operations, the house always had the windows raised to let the house air out; however, that is not done as often and they have increased their use of air conditioners.

Once the industrial hog operations arrived, there was an increase in flies and buzzards at the house. Family gatherings are now almost always held inside a building. They have smaller get-togethers because no one house is big enough to hold all the family and friends. For the most recent cookout they needed to use 3-4 fans to keep the flies and gnats away. She said the flies were outrageous and the gnats were in your face.

With respect to trucks, she has seen trucks with live pigs and trucks which had just dropped off pigs. She has not seen any trucks with dead pigs, nor any dead boxes. She indicated that one could not stay behind trucks carrying live hogs because of the odor (truck which had just dropped off pigs also retained a strong odor). Based on her observations from driving around the area, she would estimate that there were a couple of trucks a month passing through.

There were no streams or ponds close by which she could walk to for fishing.

Exemption 6 Personal Privacy

recalled what appeared to be difficulties by the owners of the house across from her parents' house that backs onto a spray field in terms of selling it. However, she indicated that there hasn't been any evidence of residents leaving en masse; even within her generation most people stay around (if they move, they move into town, the town over).

She did not recall any health impacts related to the industrial hog operations; there are many smokers in the family so respiratory ailments are related to that. She was not sure if her parents ever reached out to any regulatory authority regarding the impacts from the industrial hog or poultry operation.

Exemption 6 Personal Privacy

She has lived at this residence for the past 8 months. An industrial turkey operation is closest to the

Exemption 6 Personal Privacy

home (a little over a mile) and the owners of that operation also plant corn and other crops so there is constant spraying of waste using trucks. There is a big field close to her house, but she has never had any incidents of overspray. However, because of the how wide the trucks are riding back and forth, she believes they must be spraying beyond the borders. She did note, however, that her husband's grandmother's house is directly next to the fields and she was not sure if they have ever had any impacts from spraying.

When she arrived at the house in April they were preparing the fields and a couple of weeks ago there was spraying in preparation for the winter crops and there were strong, supersaturated odors associated with those activities. She does not believe there has been any spraying since Hurricane Matthew so the smells have not been bad the last couple of weeks. Spraying can happen any day, typically before 8; it can also happen on weekends, although typically not on Sunday. She cannot hang her clothes outside or leave windows open because of the smell.

When asked about trucks transporting live or dead hogs, she said there have not been many trucks passing by since her house is not on a major route.

The residence is served by county water. In terms of pests, flies, gnats and buzzards are bad. She was not sure of any changes in the nearby pond over time. Any gatherings at the residence are inside. Her husband gardens, but there are flies, gnats, and mosquitos outside.

A lot of people just view the impact from the industrial hog operations as a fact of life even though people talk about it all the time. There are several members of the Lumbee tribe who are also swine CAFO owners.

Interview with [Exemption 6 Personal Privacy]  
12/08/16; 10:00AM

Alexis Andiman, Earthjustice  
Daniel Isales, EPA Region III  
Adam Wilson, EPA OGC

Following interviews in Garysburg he stopped at the entrance of Barrow Trail, which housed Facilities 27-30.

We discussed the photographs which he had shared with us. Sprayfields of particular concern are to the northeast of the intersection of Barrow Trail/Gilt Lane. Stream connects to sprayfield. He was concerned by what he saw so he called Christian Breen, who in turn called the Department of Environmental Management (call at 2:30PM).

Told DEM went out the next day. Saw permit violations and issued NOV, but didn't find discharges to the stream the next day. Water ponding, but not reaching surface waters.

In the past had enjoyed good relationship with regulators but industry stopped that.

At 3000 feet while taking photos he could smell waste. Color of ponds were unusual, should have been pink. Some were very low in terms of capacity.

Lagoons have effective life of 20 years and are at capacity. Saw trucks pumping waste out of lagoon and taking it to Carroll facility in Aulander (coordinates n36 14 34.67 w 077 10 11.84). Opened up valve and let waste run on ground.

We discussed each of the photographs that [Exemption 6 Personal Privacy] had provided.

Photographs provided under cover email from Marianne Engelman Lado dated 11/30/16 (8:56AM):

11-16-16 Garysburg RD spraying: center field sprayer with ponded waste. Waste over applied, which is a permit violation. On left-hand side you see significant ponding, which then runs down to the wood line. You will notice that things look very different outside of circle. Dead areas are likely areas which had been over applied.

11-16-16 Garysburg RD with text: turned off sprayer; didn't turn other ones off.

11-16-16 Garysburg Sprayfield 2: Same sprayfield. Can see to the north of center it running off into the woods. Active sprayer to upper right-didn't turn that one off. Green area-that area likely low-lying.

11-16-16 Garysburg Sprayfield 3: a little bit further. Same as other photos.

11-16-16 RD Garysburg Edge of Sprayfield: Another center pivot sprayer-adjacent to woods, coming from other lagoon. There is a runoff area from sprayer-likely discharging as well. The sprayfield has problems-ponding, no crop uptake, nothing to hold odors back.

11-16-16 RD Garysburg Pooling 2: Picks up reflection from sun better. Believes discharges to waters. Lagoon on bottom is empty and color is wrong.

11-16-16 RD Garysburg Pooling 3: Same as prior photo, but other view.

11-16-16 RD Garysburg Pooling: Same as prior photos.

11-16-16 RD Garysburg Sprayfield: Can see discharge into woods.

11-16-16 RD Garysburg Spraying 2: Same as prior photo.

11-16-16 RD Truck Lagoon: Carroll 33-Aulander facility.

Photographs provided under cover email from Alexis Andiman on 12/8/16 (9:57AM):

Dove 11\_16 A: Tanker dumping into lagoon. No pipe from truck to lagoon, may be some rocks, but can't say for sure.

Dove 11\_16 B: Different view of above.

Dove 11\_16 C: Dumping right on the ground, hard to believe it is legal.

What [Exemption 5 Personal Privacy] saw is common in NC and he is not surprised at all by the odor complaints. The discharge he saw is an additional problem, but not so different from others that he has seen. The application of waste on fields is based on average rainfall. That could be hard in drought conditions, can't rely on waste to liquefy in fields. When rainfall goes above average, not allowed to spray where waste ponds or saturates fields, but no other option because rain is filling lagoons. Most of eastern NC under water-agricultural conversion via ditches and when it rains fields are saturated. Farmers could depopulate, but don't. Waste applied to fields regardless of rain or pumped into the woods at times.

If you cover the lagoons that increases the ammonia level in the lagoons and that will increase levels in sprayfields. Scientists estimate 60-80% nitrogen is discharged to air and 100% is redeposited when it comes down. How will they find enough land for spray fields? Things will be worse for rivers and streams.

Current lagoons are failing-useful life 20-30 years and they are now that old and all lagoons leak. With lagoons failing the situation is far worse than it has ever been; solution is large investment of money. Photographs don't lie about lagoons full of sludge, they have outlived their useful life; things are worse now than he has ever seen. Industry is likely trying to mask odors, but things will get worse. One alternative is to tank waste.

The growers are in a bind. [Exemption 5 Personal Privacy] told them about lagoons as a solution, but now most don't have enough money to correct them. Industry has money to fix things. Growers know of the problems.

After the moratorium, instead of fixing the problem decided that lagoons were cheaper so they built them elsewhere in country.

There have been times when his life has been threatened.



Near term solution: cut down size of herd, especially when there are above average rainfall conditions.  
Start a dialogue on how to get rid of lagoons-trying to fix the lagoons won't work.

On September 3, 2014, the U.S. Environmental Protection Agency (EPA) received an administrative complaint filed by Earthjustice on behalf of the North Carolina Environmental Justice Network, Rural Empowerment Association for Community Help (REACH), and the Waterkeeper Alliance, Inc. (collectively Complainants).

General Allegation: NC DEQ's (known as NC Department of Environment and Natural Resources prior to 2015) issuance of the Swine Waste Management System General Permit (General Permit) without adequate measures to control, dispose of, and monitor the significant amounts of animal waste (*e.g.*, urine, manure, carcasses) and pollutants from more than 2,000 industrial swine concentrated animal feeding operations (CAFOs) contributes to serious health problems, creates noxious odors, and prevents people in nearby homes and communities from enjoying their land and property. The complaint alleges that these adverse impacts are borne disproportionately by African Americans, Hispanics, and Native Americans.

Specifically, the adverse disparate impacts are allegedly caused by, among other things, the storing of large amounts of animal urine and feces in open air lagoons, spreading the waste slurry over nearby fields with high volume sprayers, and by the disposal and burial practices for carcasses. Numerous studies were provided or cited to help establish the link between swine waste storage and disposal operations and alleged adverse impacts.

The Complainants allege that the General Permit, which covers many facilities built before and during the 1990s, has not been updated to address well documented human health and environmental hazards by incorporating permit conditions designed to reduce or eliminate those hazards.

EPA accepted the following allegation on February 20, 2015:

North Carolina [DEQ's] regulation of swine feeding operations discriminates against African Americans, Latinos, and Native Americans on the basis of race and national origin in neighboring counties and violates Title VI and EPA's implementing regulations.

EPA proposed Alternative Dispute Resolution (ADR) to the Complainants and the Recipient immediately after acceptance. Both parties agreed to ADR in March 2015. A letter of suspension of investigation due to ADR was issued on December 29, 2015. Full investigation of the complaint resumed March 7, 2016, following an incident during the mediation process which led Complainants to withdraw from the ADR process. Specifically, Complainants objected to representatives from the North Carolina Pork Council and the National Pork Producers Council (collectively Pork Councils) from attending a confidential mediation session which had been scheduled with NC DEQ on January 13, 2016. The Pork Councils had previously petitioned EPA to intervene in the investigation (via letter dated December 18, 2015), to which Complainants objected; OCR's letter denying the Pork Councils' petition to intervene was dated January 15, 2016. Based upon this incident, Complainants filed a complaint alleging retaliation by NC DEQ via letter dated July 11, 2016. The retaliation claims were accepted for investigation via letter dated August 2, 2016;

the retaliation allegations will be investigated in conjunction with the initial complaint allegations. A letter of re-initiation of the investigation was issued May 5, 2016.

**REACH Title VI Investigation Desk Statement**  
**EPA Complaint No. 11R-14-R4**

As part of its investigation of a Title VI of the Civil Rights Act of 1964 administrative complaint (No. 11R-14-R4), which alleged discriminatory impacts from the North Carolina Department of Environmental Quality's (NCDEQ) operation of the Swine Waste Management System General Permit and allegations of intimidation and harassment, on January XXXX, 2017, EPA's External Civil Rights Compliance Office issued a letter to the North Carolina Department of Environmental Quality. This letter provides preliminary information related to the investigation and expresses concern, but does makes clear that the investigation has not concluded or that the statements contained therein represent final conclusions of fact or law. A link to the letter can be found below:

Interview with **Exemption 6 Personal Privacy**

Interviewed by: Cynthia Peurifoy and Naima Halim Chestnut

Date: November 15, 2016

General Observations: Swine facility near the house; smell was apparent.

Interview Summary:

**Exemption 6 Personal Privacy** perspective

- There are between 5 and 10 swine facilities adjacent to me within a 3 mile radius
- Around 5 or 6 in the evening, every day we can smell the swine facility
- We cannot hang our clothes out to dry due to the smell
- She moved to their current home in 2002 and did not have a water problem, but current complaints consist of bad taste of the water—"chlorine taste"
- If they drive behind waste trucks—something will get on their cars but they do not know what the substance is
- They see the Dead Trucks going throughout the week, one time **Exemption 6 Personal Privacy** had to pull over because she started gagging when she did she could see blood on the side of the truck
- She frequently experiences eye itching and irritation. Both she and her son currently use a breathing machine. Her son used to be able to go out and play but when he was about 9 or 10 he began having breathing troubles and later led to having to use a machine.
- She believes that moving away will be the only way she can get away from these issues

**Exemption 6 Personal Privacy** perspective

- Has been a resident for 40 years and has been on County Water for the last 15 years. Since the Hurricane but doesn't have any major issues with her water except that she has to pay \$23 a month
- She previously had issues with her well water including waste and rust
- Other issues she's observed are with the lagoon on Penny Branch Road and once spraying starts in the evening she has seen an increase in flies and mosquitos and can no longer have cookouts. She stated that the neighbors also have an increase in flies but have sheds they can use for shelter so she isn't sure if they experience the same problems as her
- She stated that her husband has been suffering from COPD for the past 3 years, although she admits he is also a smoker she attributes some of his medical condition to the hog facilities and he also cannot go outside during high peak smell times
- She also suffers from eye irritation at least 3 times in the last month, she stated she broke out over her face and it lasted 3-4 months, she has sinus problems, her throat itches and she frequently experiences headaches
- When she does yard work she notices that her nose begins to get stuffy and her eyes begin to itch
- She doesn't know if anyone has had issues trying to sell their homes because of these issues

Interview with: Exemption 6 Personal Privacy

Interviewed by: Cynthia Peurifoy and Naima Halim Chestnut

Date: November 15, 2016

General Observations: Swine facility directly behind the house; smell was apparent.

Interview summary:

- He has owned his property for over 20 years but also spent time living Exemption 6 Personal Privacy where he met his previous wife. He moved his then wife in with him at this home but she later left him stating that she could live there anymore due to the issues and smell. His first wife died due to breathing problems she inherited as a result of living there. He stated that his wife started having asthma after they moved there.
- Exemption 6 Personal Privacy has been experiencing health problems over the past 5-6 years including running eyes, headaches, colds and lingering coughs
- He states he thinks there are between 5-10 hog farms near his home
- He states that near his home the smell shifts and that during the rainy season he has to pump a lot
- Some observations he has had regarding the spray facilities include: once he noticed that the spraying was happening within 50 feet of the road and for a week if not, 2. the smell was unbearable mostly because of the weather but it is during this weather period that the smell is the most awful
- Once he had the Health Department test his well water because he noticed it had grease in it but they told him his water was "good" even though it was also smelling terribly. He later put in a water system to get cleaner water
- Exemption 6 Personal Privacy discussed observations he had experienced during hunting in the area. He has observed ruptured hoses which were documented by REACH. He said there is a swamp area a half mile from the tree line that has a pipe that brings wastewater there. He mentioned that hog waste is not supposed to go off site but he had observed otherwise. He also stated that he has permission to go on many properties to hunt.
- Exemption 6 Personal Privacy also stated that after he stated raising concerns about the hog farms, local creditors that he had dealt with for years started to impact his credit and bills. He found that he could no longer get credit from local creditors.
- He stated that he has been hunting in the area for years, the smell travels through the woods. You can also feel it in the air. There are times when you don't smell it.
- He also mentioned a breach in the Nuse River and the impact on a number of churches in the area. He also mentioned the flies, bugs and rats are a major problem, his windows are usually covered with flies. He mentioned that his property values are going down and that he is aware that folks are having trouble selling their property.
- He mentions that after participating in the 51-hour vigil regarding the hog farms, local leaders got nasty with him and wouldn't even speak to him.

## **Schools In Duplin County**

**40%> Minority**

<b>COUNTY</b>	<b>SCHOOL</b>	<b>BLACK</b>	<b>MINORITY</b>	<b>WHITE</b>
DUPLIN	WARSAW MIDDLE	46.8%	89.1%	9.4%
DUPLIN	WARSAW ELEMENTARY	45.3%	89%	9.8%
DUPLIN	JAMES KENAN HIGH	44%	81.4%	18%
DUPLIN	WALLACE- ROSE HILL HIGH	39.2%	68.3%	31.1%
DUPLIN	CHARITY MIDDLE	37.5%	75.5%	22.7%